Electronic TUBES

6AL5—3AL5—12AL5

TWIN DIODE

DESCRIPTION AND RATING

The 6AL5 is a miniature high-perveance twin diode in which separate cathodes are provided for the two sections. The 6AL5 is suited for a wide variety of applications which include service as a detector in FM and television circuits, automatic-gain-control rectifier, or a low-current power rectifier. Each diode can be used independently of the other or combined in parallel or full-wave arrangements. The resonant frequency of each section of the 6AL5 is approximately 700 megacycles.

The 3AL5, 6AL5 and 12AL5 are alike except for heater ratings and heater-cathode voltage ratings. In addition, the 3AL5, as a result of its controlled heater warm-up characteristic, is suited for use in television receivers which employ series-connected heaters. When the 3AL5 is used in conjunction with other 600-milliampere types which exhibit essentially the same heater warm-up characteristic, heater voltage surges across the individual tubes are minimized during the warm-up period.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

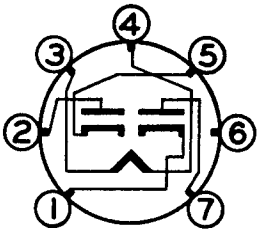
	3AL5	6AL5	12AL5	
Heater Voltage, AC or DC	3.15	6.3	12.6	Volts
Heater Current	0.6	0.3	0.15	Amperes
Heater Warm-up Time*	11	..	....	Seconds

	With Shield†	Without Shield	
Direct Interelectrode Capacitances			
Plate-No. 1 to Cathode-No. 1, Heater, and Internal Shield	3.2	2.5	μμf
Plate-No. 2 to Cathode-No. 2, Heater, and Internal Shield	3.2	2.5	μμf
Cathode-No. 1 to Plate-No. 1, Heater, and Internal Shield	3.6	3.4	μμf
Cathode-No. 2 to Plate-No. 2, Heater, and Internal Shield	3.6	3.4	μμf
Plate-No. 1 to Plate-No. 2, maximum	.0.026	0.068	μμf

MECHANICAL

Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

BASING DIAGRAM

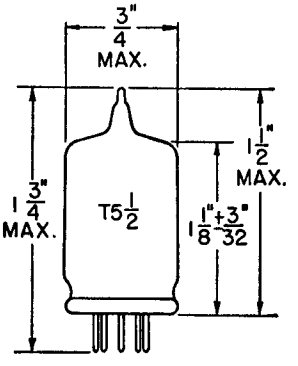


RETMA 6BT

TERMINAL CONNECTIONS

Pin 1—Cathode (Section 1)
Pin 2—Plate (Section 2)
Pin 3—Heater
Pin 4—Heater
Pin 5—Cathode (Section 2)
Pin 6—Internal Shield
Pin 7—Plate (Section 1)

PHYSICAL DIMENSIONS



RETMA 5-1

GENERAL ELECTRIC

Supersedes ET-T269C dated 1-50 and ET-T703 dated 12-49

MAXIMUM RATINGS

DESIGN-CENTER VALUES

Peak Inverse Plate Voltage		330	Volts
AC Plate-Supply Voltage per Plate, RMS		117	Volts
Steady-State Peak Plate Current per Plate		54	Milliamperes
DC Output Current per Plate		9.0	Milliamperes
Heater-Cathode Voltage	**3AL5**	**6AL5, 12AL5**	
Heater Positive with Respect to Cathode			
DC Component	100	...	Volts
Total DC and Peak	200	330	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak	200	330	Volts

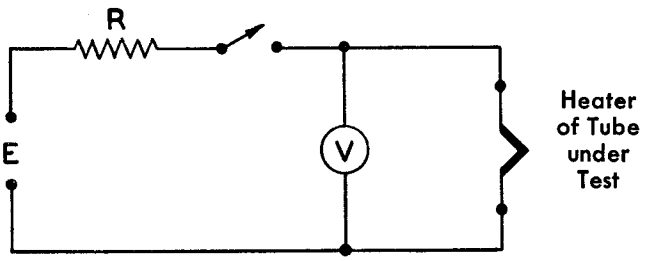
CHARACTERISTICS AND TYPICAL OPERATION

HALF-WAVE RECTIFIER

AC Plate-Supply Voltage per Plate, RMS	117	Volts
Total Plate-Supply Resistance per Plate	300	Ohms
DC Output Current per Plate	9.0	Milliamperes
Tube Voltage Drop		
I_b = 60 Milliamperes DC per Plate	10	Volts

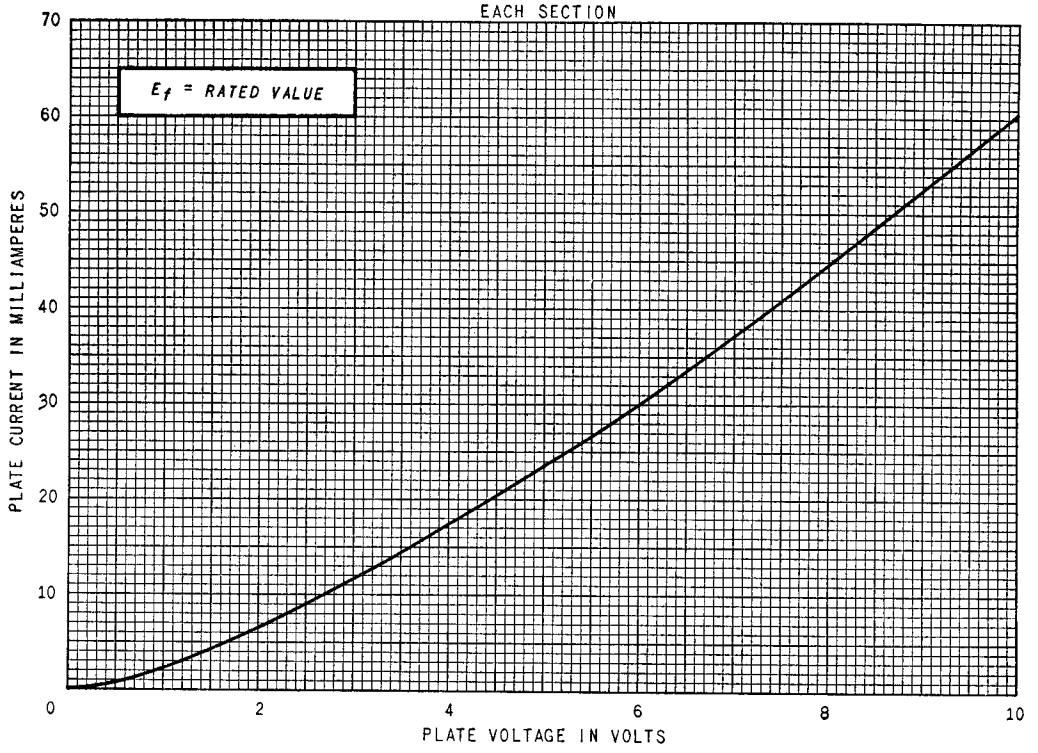
* Heater warm-up time is defined as the time required in the circuit shown at the right for the voltage across the heater terminals to increase from zero to the heater test voltage (V_1). For this type, E = 12.5 volts (RMS or DC), V_1 = 2.5 volts (RMS or DC), and R = 15.8 ohms.

† With external shield (RETMA 316) connected to pin 6.



AVERAGE PLATE CHARACTERISTICS

EACH SECTION



OPERATION CHARACTERISTICS

EACH SECTION